WE CLAIM :

1. A method of transmitting data, comprising the steps of:

    - transmitting successively on a channel, from a first unit, data blocks destined for a second unit;

    - for at least some of the transmitted data blocks, returning an acknowledgement signal from the second unit to the first unit, indicating whether said transmitted data block has been correctly received;

    - transmitting on said channel, from the first unit, a redundancy block relating to at least some of the data blocks previously transmitted for which a received acknowledgement signal indicates incorrect reception, whereby each transmitted block is accompanied by an identification signal indicating whether said block is a redundancy block;

    - associating, in the first unit, each received acknowledgement signal with a block transmitted in a determined temporal relation with the reception of said acknowledgement signal; and

    - in at least some of the cases of reception of an identification signal inconsistent with an acknowledgement signal previously returned, returning from the second unit to the first unit a restart command signal for restarting transmission of the blocks.

2. A method according to Claim 1, wherein the blocks are transmitted in turn over K subchannels, the first unit comprising K buffer memories for

temporarily storing the data blocks respectively transmitted over the K subchannels, K being a number at least equal to 1 determined in such a way that the acknowledgement signal relating to a data block transmitted over one of the K subchannels is received before the transmission of the next block over said subchannel, said next block being a redundancy block with regard to said data block transmitted in at least some of the cases where the acknowledgement signal received indicates incorrect reception.

3. A method according to Claim 1, further comprising the step of:

- restarting, in the first unit, the transmission of the successive blocks from a data block following a first data block in response to reception of the restart command signal subsequent to a reception by the second unit of an identification signal inconsistent with the acknowledgement signal returned with regard to said first data block.

4. A method according to Claim 3, wherein the blocks are transmitted in turn over K subchannels, the first unit comprising K buffer memories for temporarily storing the data blocks respectively transmitted over the K subchannels, K being a number at least equal to 1 determined in such a way that the acknowledgement signal relating to a data block transmitted over one of the K subchannels is received before the transmission of the next block over said subchannel, said next block being a redundancy block with regard to said data block transmitted in at least some of the

cases where the acknowledgement signal received indicates incorrect reception,

wherein each of the K buffer memories is dimensioned to contain a single data block,

and wherein the data block from which the first unit restarts the transmission in response to the reception of a restart command signal subsequent to the reception by the second unit of an identification signal inconsistent with the acknowledgement signal returned with regard to a first data block transmitted over one of the K subchannels is the last data block transmitted over said channel, obtained from the buffer memory corresponding to said subchannel.

5.   A method according to Claim 1, further comprising the step of :

-   restarting, in the first unit, the transmission of the successive blocks from said first data block, in response to the reception of a restart command signal subsequent to the reception by the second unit of an identification signal inconsistent with the acknowledgement signal returned with regard to a first data block.

6.   A method according to Claim 5, wherein the blocks are transmitted in turn over K subchannels, the first unit comprising K buffer memories for temporarily storing the data blocks respectively transmitted over the K subchannels, K being a number at least equal to 1 determined in such a way that the acknowledgement signal relating to a data block transmitted over one of the K

subchannels is received before the transmission of the next block over said subchannel, said next block being a redundancy block with regard to said data block transmitted in at least some of the cases where the acknowledgement signal received indicates incorrect reception,

and wherein each of the K buffer memories is dimensioned to contain two data blocks transmitted successively over a subchannel.

7. A method according to Claim 1, further comprising the steps of :

configuring a link between the first and second units, whereby at least one restart configuration parameter for the transmission of the blocks is supplied to a command module for the transmission of the blocks of the first unit; and

-   restarting, in the first unit, the transmission of the successive blocks from a data block selected as a function of said restart configuration parameter, in response to the reception of a restart command signal subsequent to the reception by the second unit of an identification signal inconsistent with the acknowledgement signal returned with regard to a first data block.

8. A method according to Claim 7, wherein the blocks are transmitted in turn over K subchannels, the first unit comprising K buffer memories for temporarily storing the data blocks respectively transmitted over the K subchannels, K being a number at least equal to 1 determined in such a

way that the acknowledgement signal relating to a
data block transmitted over one of the K
subchannels is received before the transmission of
the next block over said subchannel, said next
block being a redundancy block with regard to said
data block transmitted in at least some of the
cases where the acknowledgement signal received
indicates incorrect reception,

wherein said data block from which the first unit
restarts the transmission in response to the
reception of a restart command signal subsequent
to the reception by the second unit of an
identification signal inconsistent with the
acknowledgement signal returned with regard to a
first data block transmitted over one of the K
subchannels is obtained from the buffer memory
corresponding to said subchannel as being, as a
function of the restart configuration parameter,
either said first data block or the last data
block transmitted over said subchannel.

9.   A method according to Claim 1, further comprising
the step of :

-   returning to the first unit, from the second
    unit, a restart command signal for the
    transmission of the blocks in each case of
    reception of an identification signal
    inconsistent with an acknowledgement signal
    previously returned.

10. A method according to Claim 1, wherein the
acknowledgement signal and restart command signal
are defined by states of an uplink indication
addressed by the second unit to the first unit on
a control channel.

11. A method according to Claim 10, wherein said uplink indication comprises three states, namely positive acknowledgement, negative acknowledgement and restart command.

12. A method according to Claim 10, wherein said uplink indication comprises four states, namely positive acknowledgement with no restart command, negative acknowledgement with no restart command, positive acknowledgement with restart command and negative acknowledgement with restart command.

13. A method according to Claim 12, further comprising the step of :

   - restarting, in the first unit, the transmission of the successive blocks from a data block dependent on the type of acknowledgement, in response to the reception of an uplink indication in a state with restart command.

14. A method according to Claim 10, further comprising the step of:

   - configuring a link between the first and second units, in the course of which at least one format parameter for the restart command signals is supplied to the first and second units,

   and wherein said uplink indication has a number of states dependent on said format parameter.

15. A device for transmitting data, comprising:

   - means for transmitting successive data blocks destined for a remote unit; and

   - means for receiving an acknowledgement signal

returned by the remote unit and indicating whether a transmitted data block has been correctly received,

wherein the means for transmitting blocks are arranged to transmit a redundancy block relating to at least some of the blocks previously transmitted for which the acknowledgement signal received indicates incorrect reception,

wherein each acknowledgement signal received is associated with a block transmitted in a determined temporal relation with the reception of said acknowledgement signal,

the device further comprising means for transmitting an identification signal accompanying each block transmitted and indicating whether said block is a redundancy block,

wherein the means for transmitting blocks are arranged to restart the transmission of the blocks in response to the reception of a restart command signal originating from the remote unit and indicating an inconsistency between an identification signal received and an acknowledgement signal previously returned by the remote unit.

16. A device for transmitting data according to Claim 15, wherein the means for transmitting blocks are arranged to transmit the blocks in turn over K subchannels, and comprise K buffer memories for temporarily storing the data blocks respectively transmitted over the K subchannels, K being a number at least equal to 1 determined in such a way that the acknowledgement signal relating to a data block transmitted over one of

the K subchannels is received before the transmission of the next block over said subchannel, said next block being a redundancy block with regard to said data block transmitted in at least some of the cases where the acknowledgement signal received indicates incorrect reception.

17. A device for transmitting data according to Claim 15, wherein the means for transmitting blocks are arranged to restart the transmission of the blocks from a data block following a first data block in response to the reception of a restart command signal indicating an inconsistency between an identification signal received and an acknowledgement signal previously returned by the remote unit with regard to said first data block.

18. A device for transmitting data according to Claim 17, wherein the means for transmitting blocks are arranged to transmit the blocks in turn over K subchannels, and comprise K buffer memories for temporarily storing the data blocks respectively transmitted over the K subchannels, K being a number at least equal to 1 determined in such a way that the acknowledgement signal relating to a data block transmitted over one of the K subchannels is received before the transmission of the next block over said subchannel, said next block being a redundancy block with regard to said data block transmitted in at least some of the cases where the acknowledgement signal received indicates incorrect reception,

and wherein each of the K buffer memories is dimensioned to contain a single data block,

and wherein the data block from which the means for transmitting blocks restart the transmission in response to the reception of said restart command signal is the last data block transmitted over the same subchannel as said first block, obtained from the buffer memory corresponding to said subchannel.

19. A device for transmitting data according to Claim 15, wherein the means for transmitting blocks are arranged to restart the transmission of the blocks from a first data block in response to the reception of a restart command signal indicating an inconsistency between an identification signal received and an acknowledgement signal previously returned by the remote unit with regard to said first data block.

20. A device for transmitting data according to Claim 19, wherein the means for transmitting blocks are arranged to transmit the blocks in turn over K subchannels, and comprise K buffer memories for temporarily storing the data blocks respectively transmitted over the K subchannels, K being a number at least equal to 1 determined in such a way that the acknowledgement signal relating to a data block transmitted over one of the K subchannels is received before the transmission of the next block over said subchannel, said next block being a redundancy block with regard to said data block transmitted in at least some of the cases where the acknowledgement signal received indicates incorrect reception,

and wherein each one of the K buffer memories is

dimensioned to contain two data blocks transmitted successively over a subchannel.

21. A device for transmitting data according to Claim 15, wherein the restart command signal indicating an inconsistency between a received identification signal and an acknowledgement signal previously returned by the remote unit with regard to a data block further indicates whether the block accompanied by said identification signal has been correctly received, and wherein the means for transmitting blocks are arranged to restart the transmission of the blocks from a first data block in response to the reception of said restart command signal, said first data block being selected in a manner dependent on the fact that the restart command signal indicates or otherwise that the block accompanied by said identification signal has been correctly received.

22. A device for receiving data in the form of data blocks successively transmitted by a remote unit on a channel, comprising means for receiving an identification signal accompanying each block transmitted and indicating whether said block transmitted is a redundancy block, and means for transmitting an acknowledgement signal returned to the remote unit and indicating whether a transmitted data block has been correctly received, a redundancy block being transmitted by the remote unit with regard to each block previously transmitted for which the acknowledgement signal received indicates incorrect reception, the device further comprising means for transmitting a restart command signal

for the transmission of the blocks which is
returned to the remote unit in at least some of
the cases of reception of an identification signal
inconsistent with an acknowledgement signal

5   previously returned to the remote unit.

23. A device for receiving data according to Claim 22,
wherein the means for transmitting the restart
command signal are arranged to return to the
remote unit a restart command signal for the

10 transmission of the blocks in each case of
reception of an identification signal inconsistent
with an acknowledgement signal previously
returned.

24. A device for receiving data according to Claim 22,

15 wherein the acknowledgement signal and restart
command signal are defined by states of an uplink
indication returned to the remote unit via a
control channel.

25. A device for receiving data according to Claim 24,

20 wherein said uplink indication comprises three
states, namely positive acknowledgement, negative
acknowledgement and restart command.

26. A device for receiving data according to Claim 24,
wherein said uplink indication comprises four

25 states, namely positive acknowledgement with no
restart command, negative acknowledgement with no
restart command, positive acknowledgement with
restart command and negative acknowledgement with
restart command.

30 27. A device for receiving data according to Claim 22,
further comprising means for decoding each block

received accompanied by an identification signal inconsistent with an acknowledgement signal previously returned, the means for transmitting the restart command signal being arranged to return to the remote unit a restart command signal for the transmission of the blocks further indicating whether said block has been correctly received on completion of the decoding.

28. A device for receiving data according to Claim 22, further comprising means for decoding each block received accompanied by an identification signal inconsistent with an acknowledgement signal previously returned, the transmission means being arranged to return to the remote unit an acknowledgement signal indicating that the data block transmitted has been correctly received without returning any restart command signal when said block has been correctly received on completion of the decoding.